

What is claimed is:

1. A massage nozzle comprising:

5 a vortex chamber having a water intake section provided to form a vortical flow therein and a spouting port provided to spout the vortical flow to form a negative pressure region; and

a water-spray plate provided at a distal end of the spouting port, the water-spray plate having an opening at a center thereof and a plurality of water-spray holes around the opening.

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2. A massage nozzle comprising:

a vortex chamber having a water intake section provided to form a vortical flow therein and a spouting port provided to spout the vortical flow to form a negative pressure region;

15 a guide section having a semi-cylindrical shape and protruding further with respect to the spouting port; and

a water-spray plate provided at a distal end of the guide section, the water-spray plate having an opening at a center thereof and a plurality of water-spray holes around the opening.

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3. A massage nozzle according to claim 2, wherein the opening is larger than the spouting port.

4. A massage nozzle according to claim 2 or 3, which further  
25 comprises a baffle plate provided at a plane of the water-spray plate opposite to the spouting port or at an inner circumference wall of the guide section.

5. A massage nozzle according to any one of claims 2 to 4, wherein  
30 the guide section is formed to protrude such that a distance to the

water-spray plate with respect to the spouting port is not less than  $(L1 \times \tan \theta)$  where  $L1$  represents a half of a difference between diameters of the spouting port and the opening and  $\theta$  represents an angle at which spouted water from the spouting port flows with a plane including the spouting port.

6. A massage nozzle according to any one of claims 2 to 5, wherein a movable member is movably provided in the guide section, the movable member comprising a stopper in a semi-plate-shaped shape having an opening at a center and a ring section in a semi-cylindrical shape protruding from the circumference of the opening substantially vertically with respect to the stopper.

7 A massage nozzle according to claim 6, wherein the guide section is formed to protrude such that a distance to the stopper with respect to the spouting port in an open spouting condition is not less than  $(L2 \times \tan \theta)$  where  $L2$  represents a half of a difference between diameters of the spouting port and the opening of the stopper, and  $\theta$  represents an angle at which spouted water from the spouting port flows with a plane including the spouting port.

8. A massage nozzle according to claim 1, wherein a movable member is movably provided in the vortex chamber, the movable member comprising a stopper in a semi-plate-shaped shape having an opening at a center and a ring section in a semi-cylindrical shape protruding from the circumference of the opening substantially vertically with respect to the stopper.

9. A massage nozzle according to any one of claims 6 to 8, wherein a maximum outside dimension of the stopper is larger than the opening

of the water-spray plate.

10. A massage nozzle according any one of claims 6 to 9, wherein the ring section is provided to be able to protrude from the opening  
5 of the water-spray plate.

11. A massage nozzle according to any one of claims 1 to 10, wherein the water-spray plate further has a circumferential protrusion section protruding from the circumference of the opening of the water-spray  
10 plate to the vortex chamber.

12. A massage nozzle comprising:  
a vortex chamber having a water intake section provided to form vortical flow therein and a spouting port provided to spout  
15 the vortical flow to form a negative pressure region; and  
a movable member having an opening, at least some part of which is inserted into the vortex chamber, the opening being provided to effect the negative region externally, the some part including a first portion which has a larger outside dimension than the spouting  
20 port.

13. A massage nozzle according to claim 12, wherein the movable member has a section externally protruding from the spouting port in a condition that the first portion abuts on an inner wall of the  
25 vortex chamber in the vicinity of the spouting port.

14. A massage nozzle according to claim 13, the section externally protruding has a second portion which has a larger outside dimension than the spouting port.

15. A massage nozzle comprising:

a vortex chamber having a water intake section provided to form vortical flow therein and a spouting port provided to spout the vortical flow to form a negative pressure region;

5 a guide section in a semi-cylindrical shape protruding further with respect to the spouting port and having an inner diameter larger than that of the spouting port;

a protrusion section protruding from an inner wall of the guide section toward a rotation axis of the vortical flow; and

10 a movable member having an opening, at least some part of which is inserted into the guide section, the opening being provided to effect the negative region externally, the some part having a stopper capable of abutting on the protrusion section.

15 16. A massage nozzle according to claim 15, wherein the protrusion section is formed in a substantially annular fashion and having a plurality of water-spray holes, and a central axis of the movable member is inclinable to a central axis of the vortex chamber.

20 17. A massage nozzle according to claim 15 or claim 16, wherein the movable member has a section protruding outside the guide section in the condition that the stopper abuts on the protrusion section.

18. A massage nozzle comprising:

25 a vortex chamber having a water intake section provided to form a vortical flow therein and a spouting port provided to spout the vortical flow to form a negative pressure region;

a plurality of protrusions provided around the spouting port and protruding from the spouting port;

30 a protrusion section protruding from each of the protrusions

toward a rotation axis of the vortical flow; and

a movable member having an opening, at least some part of the movable member being inserted into between the plurality of protrusions and the spouting port, the opening being provided to effect the negative region externally, the some part having a stopper capable of abutting on the protrusion section.

19. A massage nozzle according to claim 18, wherein the movable member has a section protruding further with respect to a plurality of the protrusions in a condition that the stopper abuts on the protrusion section.

20. A massage nozzle according to any one of claims 12 to 19, wherein the movable member has a ring section having the opening inside and having a semi-cylindrical shape, and a stopper protruding from an outer circumferential wall of the ring section.

21. A massage device comprising:  
a water supply means; and  
a massage nozzle according to any one of claims 1 to 20,  
wherein water is supplied from the water supply means to the vortex chamber through the water intake section so that a suction massage can be practiced by a user utilizing a negative pressure region formed in the spouting port of the massage nozzle.